

Lorentz-Invariant, Retrocausal, and Deterministic Hidden Variables

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We review several no-go theorems attributed to Gisin and Hardy, Conway and Kochen purporting the impossibility of Lorentz-invariant deterministic hidden-variable model for explaining quantum nonlocality. Those theorems claim that the only known solution to escape the conclusions is either to accept a preferred reference frame or to abandon the hidden-variable program altogether. Here we present a different alternative based on a foliation dependent framework adapted to deterministic hidden variables. We analyse the impact of such an approach on pilot wave de Broglie-Bohm mechanics and show that retrocausation (that is future influencing the past) necessarily comes out without time-loop paradox.